

PERSONAL
INFORMATION

MUHAMMAD ZUBAIR AKRAM

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 Sex Male | Date of birth 13/08/1994 | Nationality Pakistani |

RESEARCH INTERESTS

Transcriptomics
 Nutrient interactions
 Abiotic stresses especially in Salinity and Drought
 Quinoa salinity and drought gene expression analysis and Soybean breeding
 Bioinformatics (MEGA-X, GENEVESTIGATOR etc.)

EDUCATION AND TRAINING

SEP 2019- APRIL 2021

Ph.D. Agricultural Genetic Engineering (left) 2019-2021 (90.89% up to 3rd sem.)

NIGDE OMER HALISDEMIR UNIVERSITY, NIGDE, TURKEY

- Molecular Biology of Abiotic Tolerance
- Analysis of Genes and Genomes of Plant
- Plant Molecular Biological Techniques
- Scientific Research Techniques and Publication Ethics
- Genomics
- Root Genomics and Engineering
- Gene Transfer Techniques in Plants

AUG 2017- AUG 2019

M.Sc. (Hons) Agriculture-Agronomy (CGPA- 3.52/4.00) 2019

UNIVERSITY OF AGRICULTURE, FAISALABAD, PAKISTAN

Thesis Topic: Morphological Characterization and Yield Potential of Elite Quinoa Germplasm

- Physiology of Crop Nutrition
- Stress Physiology
- Seed Technology
- Management of Crop Nutrition
- Field Crop Experimentation
- Water Relation of Plants
- Climatic Change and Agro-Sustainability

OCT 2013- AUG 2017

B.Sc. (Hons) Agriculture (CGPA – 3.54/4.00) 2017

PMAS ARID AGRICULTURE UNIVERSITY, RAWALPINDI, PAKISTAN

- Basic Agriculture
- Project, Planning, Execution Scientific Writing
- Seed Production and Technology
- Field Crop Physiology
- Breeding Field Crops
- Crop Growth Modelling
- Stress Physiology
- Animal Husbandry

SEP 2010- SEP 2012

F.Sc. (Pre-medical) (Marks - 786/1100) 2012

GOVERNMENT COLLEGE FOR BOYS, PATTOKI, KASUR. PUNJAB, PAKISTAN.

SEP 2008- AUG 2010

Matriculation (Science) (Marks - 910/1050) 2010

THE TRUST SCHOOL T.N.B LAHORE. PUNJAB, PAKISTAN.

WORK EXPERIENCE

DEC 2012- OCT 2013

Teaching Experience

Work as a Senior Science teacher in Tameer-E-Seerat High School, Raiwind, Lahore, Pakistan for a period of around 1 year.

JULY 2016 - SEP 2016

Office of Agronomist Directorate of Soil Conservation, Rawalpindi

Agronomic Practices with relation to Soil Conservation.

OCT 2017- AUG 2019

Agronomic Research Area, UAF, Pakistan.

Field Management and Crop Production of super foods (Expertise in Quinoa Production and other superfoods like Amaranth, Chia and Buck wheat) under supervision of group leader Prof. Dr. Shahzad Maqsood Ahmed Basra.

PROJECTS COMPLETED

Research Fellow

Exploring the Potential of *Chenopodium quinoa* Willd. as low Input High Nutrition and Climatic Resilient Crop (Feb 2018- Aug 2019).

Funding agency: Higher Education Commission, Pakistan.

Project number: 4652

Research Fellow

Exploring the Potential of Moringa as a Crop Growth Enhancer and Forage Crop (Sep 2017- Aug 2019).

Funding agency: Higher Education Commission, Pakistan.

Project number: 20-1042/R&D/11

Research Assistant

Investigation of the Role of *GATA12* in Regulation of Iron Deficiency Signalling in *Arabidopsis thaliana* (Feb 2020- June 2021)

Funding agency: TUBITAK, Turkey.

Project number: 119Z149

EDITORIAL EXPERIENCE

REVIEWER ACTIVITIES

Member of editorial board as “**Advisory Board**” of “**World Biologica**” Journal from May, 2021 <https://www.worldbiologica.com/editorial-board>.

- Advance in Science, Technology and Engineering Systems Journal (**ASTESJ**) from May 2020.
- **PLoS One** from November 2020
- Journal of Agriculture, Food, Environment and Animal Sciences (**JAFEAS**) from December 2020
- International Journal of Agricultural and Environmental Information System (**IJAEIS**) from January 2021

PERSONAL SKILLS

Good command of planning, formation of layout designs and experience of experimental design.

Good command of data measurement and analysis.

COMPUTER SKILLS

Microsoft office (Word, Excel, PowerPoint), Statistics etc.

COMMUNICATION SKILLS

Good communication skills in English and Urdu were gained through my experience in School Teaching.

IELTS from British Council from April 2017- April 2019.

Turkish Language level A1 completed.

JOB-RELATED SKILLS

Good command of planning and application of experimental design.

Have good skills of crop production and experimental data measurement.

Have good teaching experiences.

SCIENTIFIC SKILLS

Spectrometry
RNA and DNA analysis
Bioinformatics
Gel Electrophoresis
Breeding of Soybean
Real Time PCR

THESIS and PUBLICATIONS

M.SC. (HONS.) THESIS

M.Sc. (Hons.) Agriculture-Agronomy research thesis title: **“Morphological Characterization and Yield Potential of Elite Quinoa Germplasm”**.

ABSTRACT PUBLISHED/
IN PROGRESS**Induction of Heat Tolerance in Quinoa with foliar applied Moringa leaf extract.**

Nabila Rashid, Shahzad M.A. Basra, Abdul Wahid, **Muhammad Zubair Akram** and Muhammad Tayyab Gulzar (**Accepted for Poster Presentation**) In National Symposium on *Moringa Oleifera* “Recent Trends and Challenges in Processing and Product Developments” was jointly organized by Punjab Agriculture Research Board (PARB) and University of Sargodha, Sargodha, Pakistan on 09-10 April 2018 (**Poster presentation**) and got 3rd Position overall.

Mitigation of Salt stress in wheat by exogenous application of Moringa leaf extract.

Jabir Riaz, Shahzad M.A. Basra, Shahid Iqbal, Muhammad Bilal Hafeez, Hafeez-Ur-Rahman, Yasir Ramzan and **Muhammad Zubair Akram (Poster Presentation)** In National Symposium on *Moringa Oleifera* “Recent Trends and Challenges in Processing and Product Developments” was jointly organized by Punjab Agriculture Research Board (PARB) and University of Sargodha, Sargodha, Pakistan on 09-10 April 2018.

Phenotyping quinoa genotypes for evaluating heat stress tolerance association.

Muhammad Zubair Akram, Hafeez-Ur-Rahman, Shahid Iqbal, Muhammad Waqas and Shahzad M.A. Basra (**Poster Presentation**) In **5th International Plant Phenotyping Symposium, Adelaide, Australia** 02nd-05th October 2018.

Adaptability of newly introduced Amaranth germplasm under agro-ecological conditions of Faisalabad.

Samreen Nazeer, Shahzad Maqssod Ahmed Basra, **Muhammad Zubair Akram**, Muhammad Bilal Hafeez and Shahid Iqbal (**Poster Presentation**) In **15th PAS Forum Conference on “Innovations in Agriculture”**, University of Agriculture, Faisalabad 13-15th February 2018.

Evaluating the efficiency of stored moringa leaf extract on growth and yield of hybrid maize.

Ansar Raza, Shahzad M.A. Basra, **Muhammad Zubair Akram**, Samreen Nazeer and Muhammad Bilal Hafeez (**Oral Presentation**) in **International Conference on “Water Saving and Plant Production Strategies: Constraints and Implications for Sustainable Agriculture”** was organized by Department of Botany, Government College University, Faisalabad on 26-28th March 2019.

Superfoods: a viable solution to food and nutrition security of Pakistan.

Shahzad M.A. Basra, Muhammad Bilal Hafeez, **Muhammad Zubair Akram**, Irfan Afzal and Hafeez ur Rehman. (**Oral presentation**) in “**1st International conference on Sustainable Agriculture: Food Security under Changing Climate Scenarios**” was organized by Ghazi University Dera Ghazi Khan on 3rd-5th April 2019.

Screening of USDA Amaranth germplasm for morphological and phenological characteristics.

Samreen Nazeer and **Muhammad Zubair Akram (Oral Presentation but couldn't present because of funds issues)** in “**2. International Conference on "Agriculture, Forestry & Life Sciences" (ICAFLS 2019)** was organized in Prague, Czech Republic on 18th-20th April 2019.

Phenotyping Quinoa genotypes for evaluating heat stress tolerance association.
Muhammad Zubair Akram (Oral Presentation but couldn't present because of funds issues) in "2. International Conference on "Agriculture, Forestry & Life Sciences" (ICAFLS 2019) was organized in Prague, Czech Republic on 18th-20th April 2019.

Effect of different seed priming techniques on germination and growth of Mung Bean (*Vigna radiata* L.).

Taseer Ahmad, Muhammad Tahir, Muhammad Abdullah Saleem, Intizar Hussain, Muhammad Zubair Akram and Umar Murad Farooqi (Oral Presentation but couldn't present because of funds issues) in "2. International Conference on "Agriculture, Forestry & Life Sciences" (ICAFLS 2019) was organized in Prague, Czech Republic on 18th-20th April 2019.

Influence of seed priming with potassium nitrate and salicylic acid on germination and seedling vigour of Mung Bean.

Muhammad Abdullah Saleem, Muhammad Tahir, Taseer Ahmad, Intazar Hussain, Umar Murad Farooqi and Muhammad Zubair Akram (Oral Presentation but couldn't present because of funds issues) in "2. International Conference on "Agriculture, Forestry & Life Sciences" (ICAFLS 2019) was organized in Prague, Czech Republic on 18th-20th April 2019.

Application of silicon priming under various irrigation regimes in hybrid Maize.

Samreen Nazeer and Muhammad Zubair Akram (Oral Presentation but couldn't present because of funds issues) in "2. International Conference on "Agriculture, Forestry & Life Sciences" (ICAFLS 2019) was organized in Prague, Czech Republic on 18th-20th April 2019.

Phenotyping crop canopy and root traits for assessment of adaptability in Quinoa genotypes.

Muhammad Bilal Hafeez, Shahzad M.A. Basra, Hafeez-ur-Rehman, Muhammad Zubair Akram, Samreen Nazeer, Shahid Iqbal and Muhammad Waqas in "5th International Conference Rhizosphere 5 - Shining light on the world beneath our feet" will be organize by University of Saskatchewan, Canada on 7th -11th July 2019 (Poster presentation but couldn't present because of funds issues).

Study of various physio-genetic parameters of single cross double haploid Maize hybrids.

Muhammad Zubair Akram, Madad Ali, Samreen Nazeer and Emre Aksoy in Bitki Islahi ve Genetigi Ogrenci Kongresi organized by Nigde Omer Halisdemir University, Nigde, Turkey on 27-28 May 2021.

Assessment of Amaranth genotypes against different salinity levels.

Samreen Nazeer, Muhammad Zubair Akram and Emre Aksoy in Bitki Islahi ve Genetigi Ogrenci Kongresi organized by Nigde Omer Halisdemir University, Nigde, Turkey on 27-28 May 2021.

Amarnath a nutrient-rich and climate-resilient crop: A review.

Samreen Nazeer, Muhammad Zubair Akram, Amir Maqbool and Emre Aksoy in TURK-COSE 2021: III International Turkic World Congress on Science and Engineering will organize by L.N. Gumilyov Eurasian National University (ENU), Kyrgyz-Turkish Manas University (KTMU) and Nigde Omer Halisdemir University, Nigde, Turkey on 14-15 June 2021.

Assessment of morphological and physiological parameters of two Quinoa (*Chenopodium quinoa*) genotypes under salinity conditions.

Muhammad Zubair Akram, Amir Maqbool, Samreen Nazeer and Emre Aksoy in TURK-COSE 2021: III International Turkic World Congress on Science and Engineering will organize by L.N. Gumilyov Eurasian National University (ENU), Kyrgyz-Turkish Manas University (KTMU) and Nigde Omer Halisdemir University, Nigde, Turkey on 14-15 June 2021.

PUBLICATIONS
RESEARCH PAPERS

Muhammad Farhan Aslam, Shahzad Maqsood Ahmed Basra, Muhammad Bilal Hafeez, Shahbaz Khan, Muhammad Sohail Irshad, Shahid Iqbal and **Muhammad Zubair Akram**. 2019. Inorganic fertilization improves quality and biomass of *Moringa oleifera* L. Agroforestry Systems. DOI: 10.1007/s10457-019-00464-7.

Samreen Nazeer, Shahzad Maqsood Ahmed Basra, Shahid Iqbal, Muhammad Bilal Hafeez, Ahmad Mateen, **Muhammad Zubair Akram**, Noreen Zahra, Shahbaz Khan, Muhammad Sohail Saddiq and Jahanzaib. 2020. Adaptability and yield potential of different species of amaranth under semiarid conditions. International Journal of Agriculture and Biology, 24:1558–1564. DOI: 10.17957/IJAB/15.1595.

Tasleem Kanwal, Abid Shahzad, Taseer Ahmad, Muhammad Abdullah Saleem, **Muhammad Zubair Akram** and Samreen Nazeer. 2020. Comparative performances of new wheat lines under different irrigation regimes. FUUAST Journal of Biology.

Samreen Nazeer, **Muhammad Zubair Akram**, Taseer Ahmad. 2020. Amaranth as nutrition-rich and climatic resilient crop, A review. 2020. Agriculturae Consequens Scientificus. (Submitted).

Muhammad Junaid, Shahzad Maqsood Ahmed Basra, Shahid Iqbal, **Muhammad Zubair Akram**, Muhammad Sohail Siddique, Shahbaz Khan and Muhammad Bilal Hafeez. 2021. Foliar applied moringa leaf extract improves productivity of quinoa crop through physiological modulations. Asian Journal of Agriculture and Biology (Submitted).

Muhammad Zubair Akram, Shahzad Maqsood Ahmed Basra, Muhammad Bilal Hafeez, Shahbaz Khan, Samreen Nazeer, Shahid Iqbal, Muhammad Sohail Saddiq and Noreen Zahra. 2021. Adaptability and yield potential of new quinoa lines under agro-ecological conditions of Faisalabad-Pakistan. Asian Journal of Agriculture and Biology, 2021(2):202005301. DOI: <https://doi.org/10.35495/ajab.2020.05.301>.

Madad Ali, **Muhammad Zubair Akram**, Muhammad Abdullah Saleem, Samreen Nazeer and Taseer Ahmad. 2021. Study of physio genetic parameters of double haploid single cross Maize hybrid. International Journal of Agriculture and Biology (Submitted)

Characterization of GmZIP gene family under Fe deficiency conditions in Soybean. **Muhammad Zubair Akram**, Amir Maqbool and Emre Aksoy. (Working on this manuscript, Bioinformatic analysis has been done now working on draft).

Characterization of GmFRO gene family under Fe deficiency conditions in Soybean Samreen Nazeer, **Muhammad Zubair Akram**, Amir Maqbool and Emre Aksoy. (Working on this manuscript, Bioinformatic analysis has been done now working on draft).

Genome-wide identification of NHX Na⁺/H⁺ antiporters and their roles in long-term salinity and drought treatments in two contrasting quinoa genotypes. Bayram Ali Yerlikaya, **Muhammad Zubair Akram**, Amir Maqbool, Sefa Ayten Özgür Kivilcim Kılınç and Emre Aksoy. (Working on this manuscript, all analysis has been done except some enzymatic activity analysis including Proline, Ascorbic acid and H₂O₂ now working on draft).

CHAPTER PUBLISHED

Muhammad Zubair Akram, Samreen Nazeer, Anila Sadia and Muhammad Abdullah Saleem. 2020. Phytoremediation and Environmental Factors. In: Bioremediation and Phytoremediation for Sustainable Soil Management. Apple Academic Press, Taylor and Francis. ISBN: 9781774637180.

Muhammad Bilal Hafeez, Ali Raza, Noreen Zahra, Kanwal Shaukat, **Muhammad Zubair Akram**, Shahid Iqbal and Shahzad Maqsood Ahmed Basra. 2021. Gene regulation in halophytes in conferring salt tolerance. In *Handbook of Bioremediation* (pp. 341-370). Academic Press. DOI: 10.1016/B978-0-12-819382-2.00022-3.

Noreen Zahra, Kanval Shaukat, Muhammad Bilal Hafeez, Ali Raza, Sadam Hussain, Muhammad Tanees Chaudhary, **Muhammad Zubair Akram**, Shiva Najafi Kakavand, Muhammad Sohail Saddiq and Abdul Wahid. 2021. Physiological and Molecular Responses to High, Chilling, and Freezing Temperature in Plant Growth and Production: Consequences and Mitigation Possibilities. In: Husen A. (eds) Harsh Environment and Plant Resilience. Springer, Cham. https://doi.org/10.1007/978-3-030-65912-7_10.

Samreen Nazeer, **Muhammad Zubair Akram** and Madad Ali. 2021. Rhizosphere Engineering and Soil Sustainability: An Introduction. In Malik, J. A. (Ed.), Handbook of Research on Microbial Remediation and Microbial Biotechnology for Sustainable Soil (pp. 583-601). IGI Global. <http://doi:10.4018/978-1-7998-7062-3.ch024>

URDU PUBLICATIONS

NEWSPAPER ARTICLE

Muhammad Zubair Akram. 2018. Amaranth Ghazai ehmiyat ka hamil poda-Amaranth. Jang Newspaper.

DIGEST ARTICLE

Muhammad Zubair Akram, Muhammad Bilal Hafeez and Shahzad Maqsood Ahmed Basra. 2018. Quinoa. Zarai Digest, University of Agriculture, Faisalabad.

Samreen Nazeer, **Muhammad Zubair Akram** and Shahzad Maqsood Ahmed Basra. 2017. Amaranth, Ek besh-baha Gazai Ahmiyat ki Nai Fasal. Zarai Digest, University of Agriculture, Faisalabad.

Samreen Nazeer, **Muhammad Zubair Akram** and Shahzad Maqsood Ahmed Basra. 2017. Quinoa ka Taruf, Khasosiyat or Tariqa-e-Kast. Nida-E-Kissan.

ADDITIONAL INFORMATION

HONOURS AND AWARDS

Awarded by a laptop in "PM Youth Laptop Scheme" in 2015.

MEMBERSHIPS

- Global quinoa network (GCN)
- Agri-Tourism Development Corporation of Pakistan
- Moringa for Life

CERTIFICATIONS

- **Certificate of participation** in "The Unilever International Art Project for Schools" organized by Wall's in 2006 in Collaboration with The Trust School T.N.B Lahore.
- **Certificate of participation** in "First Traffic Internship & Safety Education Programme" organized by City Traffic Police Lahore in Collaboration with Atlas Honda in 2009.
- **Attended "First Moringa Festival"** on 21st January 2018 at Pattoki.
- **Certificate of participation** in "International Poultry Expo-2015." Organized by Pakistan Poultry Association in 2015.
- **Certificate of Blood Donation** in "Shaheed Zulfiqar Ali Bhutto Medical University (PIMS) Islamabad, Pakistan on 16th April 2016.
- **Certificate of Honour** to participate in "National Agri-Tourism Mela" organized by Agri-Tourism Development Corporation of Pakistan on 11-13 November 2016.
- **Certificate of appreciation** in "CV MAKEUP Competition" on 7th February 2018 at University of Agriculture, Faisalabad.
- **Certificate of Honour** to participate in "Lok Mela" organized by Agri-Tourism Development Corporation of Pakistan in March 2018.
- **Certificate of Participation** in "National Quinoa Day" organized by Agri-Tourism Development Corporation of Pakistan on 10th March 2018.
- **Certificate of Participation** in "Nutrition Week Celebration" organized by Department of Home Economics, Government College University, Faisalabad on 13th March, 2018.
- **Certificate of Participation** in "National Symposium on *Moringa oleifera*: Recent Trends and Challenges in Processing and Product Development" Jointly organized by Department of Chemistry, University of Sargodha and Punjab Agriculture Research Board (PARB) on 09-10 April 2018.
- **Certificate of attending** International Conference on "SOYBEAN: CHALLENGES

- AND OPPORTUNITIES** organized by Department of Agronomy and Department of Plant Breeding and Genetics, University of Agriculture, Faisalabad on 17-18 September 2018
- Attending **“Scientific Writing Workshop”** Scientific Expert organized by Agrarian Society, UAF.
 - **Certificate of attending** on day Workshop on **“Kitchen Gardening and Edible Landscape”** organized by University of Agriculture, Faisalabad, Agri-Tourism Club (UAF), Best Garden Nursery Farms, Institute of Horticultural Sciences (UAF) and Agri-Tourism Development Corporation of Pakistan on 3rd February 2019.
 - **Certificate of attending Conference** on **“Innovation in Agriculture: Nourishing Pakistan in Changing Climate”** organized by Institute of Soil and Environmental Science, University of Agriculture Faisalabad and Pakistan Agriculture Scientists Forum (PAS Forum) on 13-15 February 2019.
 - **Attend National Seminar** on **“Superfood Crops for Sustainable Food Security”** organized by Department of Agronomy, Ghazi University, Dera Ghazi Khan on 11 March 2019.
 - **Certificate of appreciation** on participation in **“National Quinoa Festival”** on 23rd March 2019 organized by J.K. Agri-Tourism Farms.
 - **Attended “Loqat festival”** Agri-Tourism Development Corporation of Pakistan on 28th April 2019.
 - **Certificate of appreciation** on participation in **“Food Trends, Challenges and Sustainability Strategies under Changing Climate”** on 11th July 2019 organized by University of Agriculture, Faisalabad.
 - **Certificate of completion** of module **“How to review a manuscript”** on 28th March 2020 presented by Jaap van Harten by Research Academy of ELESVIER.
 - **Certificate of completion** of module **“How to respond to reviewers comments”** on 28th March 2020 presented by Paul Cumine by Research Academy of ELESVIER.
 - **Certificate of Achievement** of completion of course **“How to teach online: providing continuity for students”** presented by Matt Jenner head of learning FutureLearn for 3 weeks from 9th April 2020.
 - **Certificate of online training** titled **“International Food Standards”** by National Alliance for Safe Food on 14th May 2020.
 - **Certificate of Participation** **“Infection Prevention and Control (IPC) for Novel Coronavirus (COVID-19)”** by World Health Organization on 10th April 2020.
 - **Certificate of Achievement** of completion of course **“Tackling the novel coronavirus”** provided by London School of Hygiene & Tropical Medicine and UK Public Health Rapid Support Team presented by Dr Anna Seale Associate Professor, Wellcome Trust Career Development Fellow and Deputy Director for Research for the UK Public Health Rapid Support Team London School of Hygiene & Tropical Medicine on FutureLearn for 3 weeks from 4th April 2020.
 - **Certificate of completion** of module **“Let’s break the chain of COVID-19 infection”** on 10th April 2020 by Mouhammad Bin Rashid University of Medicine and Health Sciences, UAE.
 - **Certificate of completion** of module **“How to prepare your manuscript”** on 9th April 2020 presented by Anthony Newman by Research Academy of ELESVIER.
 - **Certificate of Participation** in **“Clinical care severe acute respiratory infection”** by World Health Organization on 10th April 2020.
 - **Certificate of appreciation** on online training **“The Global Markets Programme: A Pathway towards GFSI-Recognised Certification”** on 20th June 2020 organized by National Alliance for Safe Food.
 - **Certificate of participation** for attending **International Conference for Youth in Agriculture 2021** organized by **IAAS World and CSAYN Global Resilience of Living World** from May 13th, 2021 to May 16th, 2021.
 - **Certificate of Participation** for attending **“III. Bitki Islahı ve Genetiği Öğrenci Kongresi 2021 online”** organized by **Faculty of Agricultural Sciences and Technologies, Nigde Omer Halisdemir University, Nigde Turkey** from 27th May to 28th May, 2021.